Allen-Bradley

Bulletin 2362 Units

Bulletin 2362HA
125HP Roll-Out Unit

Bulletin 2362 - Digital AC Drives in CENTERLINE® Motor Control Centers

1336 PLUS™ - Variable Frequency
1336 PLUS™ II
1336 FORCE - Vector Control
1336 IMPACT
PowerFlex® 700
PowerFlex® 700S

Selection Guide

Rockwell Automation

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Introduction

About This Publication

Motor Control Centers offer a convenient design for the configuration of AC drive lineups. When configured in conjunction with a *Bulletin 2100* main incoming structure, the CENTERLINE® thru-bus solution eliminates the challenge of low-voltage power distribution for drives.

We designed this publication to help you configure AC drive equipment within Bulletin 2100 CENTERLINE Motor Control Center (MCC) sections. The selection tables in this publication will help you specify the necessary sections and units.

Important: When using this publication, please be sure to read all footnotes. Footnotes are used throughout this publication to advise you of configuration and limitation of structures, units, and options.

For PowerFlex® drive units listed in Table 1.A:

- select drive unit options using Table 1.B
- select MCC vertical sections selected using Table 3.A

For 1336 drive units listed in Table 2.A:

- elect drive unit options using Table 2.B
- select MCC vertical sections selected using Table 3.A

If there is a need to purchase a separately-assembled unit (for example, if a spare unit is desired), select the unit as listed in Table 1.A or Table 2.A. When constructing the catalog number string, use the “N” enclosure designation for NO structure assembly.

Options or equipment not offered through the 2362 standard AC drive unit program can be provided to you as an engineered solution. Contact your local Rockwell Automation Drive Systems representative.

General Product Description

Bulletin 2362 AC motor drive units are specifically designed for use in CENTERLINE® MCC lineups. You may select from numerous 1336 PLUS® Variable Frequency, 1336 PLUS® II Variable Frequency, 1336 FORCE Field-Oriented Control Vector, 1336 Impact, PowerFlex® 700, and PowerFlex® 700S digital AC motor drives. You may have these drives configured for either a common-AC or a common-DC power bus configuration.

NEMA Class I, Type A-rated units are standard. To provide either a NEMA Type 1 or a NEMA Type 1 with gaskets enclosure rating, the unit must be installed into an appropriately-sized MCC vertical section. Terminals

mounted within the drive units allow for the connection of remote operator devices, I/O signals, etc.

Note: NEMA Type 1 is the standard feature; and NEMA Type 1 with unit door area gaskets and door fan filters is available as an option.

A variety of available options provide increased unit functionality. The following drive units are available:

Drive	Frames	Unit Type
1336	A, B, C	plug-in
	D, E, F, G	roll-out
PowerFlex®	0, 1, 2, 3	plug-in
	4, 5, 6, 9	frame-mounted

Plug-In Drive Units

The basic standard plug-in drive unit includes:

- the selected drive, mounted and wired in an MCC bucket
- a fused-disconnect switch with an operator mechanism and appropriate fuses
- power and ground stabs for connecting to bus structure
- stab-to-disconnect wiring
- output common-mode chokes
- a unit support pan
- a vented door with fan(s), if appropriate

Note: MCC units that contain plug-in buckets come standard with manual, vertical bus shutters.

Frame-Mounted Drive Units

The basic standard frame-mounted drive unit includes:

- the selected drive, mounted and wired on a panel-mounted assembly
- a fused-disconnect switch with an operator mechanism and appropriate fuses
- bus-to-disconnect wiring
- output common-mode chokes
- a vented door with fan(s), if appropriate

Roll-Out Drive Units

The basic standard roll-out drive unit includes:

- the selected drive, mounted and wired on a roll-out chassis assembly
- a fused-disconnect switch with an operator mechanism and appropriate fuses
- bus-to-disconnect wiring
- output common-mode chokes in all D, E, and F-frame units and in G-frame 2362H units (common DC bus 1336 FORCE)
- a vented door with fan(s), if appropriate

Note: All D and E-frame units and common DC bus F-frame units are mounted in 20" deep vertical sections. Common AC bus F-frame units and all G-frame units are mounted in 20" + 5" (bumpback) deep vertical sections for ease of serviceability.

UL Certification

Bulletin 2100 CENTERLINE® Motor Control Centers are certified by Underwriters Laboratories, Inc. (UL), Standard UL 845. The 2362 family of AC drive units are UL/cUL listed. All vertical sections and units certified by UL will carry the label. Vertical sections and units are labeled separately.

Documentation

The customer is supplied with copies of the following:

- the unit wiring diagram and installation instructions
- publications
  - *Bulletin 2300 Drive Systems Installation Manual* (2300-5.1)
  - the appropriate AC drive user manual
  - *Receiving, Handling, and Storing Motor Control Centers* (2100-5.5)

For additional documentation, consult your Rockwell Automation Sales Office.

Notes:

PowerFlex® 700 and 700S Product Selection

Catalog Number Explanation

Use the following tables for determining the catalog number used to order PowerFlex 700 and 700S drives in Bulletin 2362 MCCs.

2362	S	A	-	4	A	B	-	48	DA	-	OPTIONS

Drive Type

Q	PowerFlex® 700 (AC Common Bus)
R	PowerFlex® 700 (DC Common Bus)
S	PowerFlex® 700S (AC Common Bus)
T	PowerFlex® 700S (DC Common Bus)

Wiring Type

A	"A" Type
B	"A" Type Power Wiring with Bottom Exit
T	"A" Type Power Wiring with Top Exit

Frame Size

See Table 1.A on page 1-2

Enclosure

A	NEMA Type 1 with no gaskets or door fan filters
J	NEMA Type 1 with gaskets or door fan filters

Input Voltages

A	230V AC Bus
J	380V AC Bus
B	460V AC Bus
C	575V AC Bus
D	310V DC Bus
V	512V DC Bus
E	620V DC Bus
F	775V DC Bus

Horsepower Rating(3)

85	0.33
33	0.5
34	0.75
35	1.0
36	1.5
37	2.0
38	3.0
39	5.0
40	7.5
41	10
42	15
43	20
44	25
45	30
46	40
47	50
48	60
49	75
50	100
51	125
52	150
54	200
56	250
57	300
58	350
59	400
60	450
61	500
62	600
63	650
64	700
66	800

Disconnect Type

DA	Fused Disconnect

Options

See Table 1.B on page 1-3

Frame Selection

The following table is used to determine the frame size required based on the desired Drive Type, Input Voltage and Horsepower.

Table 1.A PowerFlex 700 ad 700S Frame Selection

			PowerFlex® 700 Frame Sizes						
Drive Type Code	Input Voltage	Duty Rating	0 (2.0 SF 20" Wide)	1 (2.0 SF 20" Wide)	2 (2.0 SF 20" Wide)	3 (3.0 SF 20" Wide)	4 (6.0 SF 20" Wide)	5 (6.0 SF 20" Wide)	6 (6.0 SF 25" Wide)
Q	230V AC	ND - HP	0.5 - 1	2 - 7.5	10	15 - 20	25 - 30	40 - 50	60 - 75
		HD - HP	0.33 - 0.75	1.5 - 5	7.5	10 - 15	20 - 25	30 - 40	50 - 60
	380V AC	ND - kW	0.75 - 4	7.5 - 11	15 - 18.5	22 - 37	45	55 - 75	90 - 132
		HD - kW	0.55 - 3	5.5 - 7.5	11 - 15	18.5 - 30	37	45 - 55	75 - 110
	460V AC	ND - HP	0.5 - 7.5	10 - 15	20 - 25	30 - 50	60	75 - 100	125 - 150
		HD - HP	0.33 - 5	7.5 - 10	15 - 20	25 - 40	50	60 - 75	100 - 125
	575V AC	ND - HP	0.5 - 10	10 - 15	20 - 25	30 - 50	60	75 - 100	125 - 150
		HD - HP	0.75 - 7.5	7.5 - 10	15 - 20	25 - 40	50	60 - 75	100 - 125
R	310V DC	ND - HP	0.5 - 1	2 - 7.5	10	15 - 20	25 - 30	40 - 50	60 75
		HD - HP	0.33 - 0.75	1.5 - 5	7.5	10 - 15	20 - 25	30 - 40	50 - 60
	512V DC	ND - kW	0.75 - 4	7.5 - 11	15 - 18.5	22 - 37	45	55 - 75	90 - 132
		HD - kW	0.55 - 3	5.5 - 7.5	11 - 15	18.5 - 30	37	45 - 55	75 - 110
	620V DC	ND - HP	0.5 - 7.5	10 - 15	20 - 25	30 - 50	60	75 - 100	125 - 150
		HD - HP	0.33 - 5	7.5 - 10	15 - 20	25 - 40	50	60 - 75	100 - 125
	775V DC	ND - HP	0.5 - 10	10 - 15	20 - 25	30 - 50	60	75 - 100	125 - 150
		HD - HP	0.75 - 7.5	7.5 - 10	15 - 20	25 - 40	50	60 - 75	100 - 125

			PowerFlex® 700S Frame Sizes							
Drive Type Code	Input Voltage	Duty Rating	1 (2.0 SF 20" Wide)	2 (2.0 SF 20" Wide)	3 (3.0 SF 20" Wide)	4 (6.0 SF 20" Wide)	5 (6.0 SF 20" Wide)	6 (6.0 SF 25" Wide)	9 (6.0 SF 30" Wide)	10 (6.0 SF 35" Wide)[1]
S	230V AC	ND - HP	0.5 - 7.5	10	15 - 20	25 - 30	40 - 50	60 - 75	NA	NA
		HD - HP	0.33 - 5	7.5	10 - 15	20 - 25	30 - 40	50 - 60	NA	NA
	380V AC	ND - kW	0.75 - 11	15 - 18.5	22 - 37	45	55 - 75	90 - 132	132 - 160	(Future)
		HD - kW	0.55 - 7.5	11 - 15	8.5 - 30	37	45 - 55	75 - 110	110 - 132	(Future)
	460V AC	ND - HP	0.5 - 15	20 - 25	30 - 50	60	75 - 100	125 - 150	200 - 250	(Future)
		HD - HP	0.33 - 10	15 - 20	25 - 40	50	60 - 75	75 - 125	150 - 200	(Future)
	575V AC	ND - HP	0.5 - 15	20 - 25	30 - 50	60	75 - 100	125 - 150	150 - 200	(Future)
		HD - HP	0.33 - 10	15 - 20	25 - 40	50	60 - 75	100 - 125	150	(Future)
T	310V DC	ND - HP	0.5 - 7.5	10	15 - 20	25 - 30	40 - 50	60 - 75	NA	NA
		HD - HP	0.33 - 5	7.5	10 - 15	20 - 25	30 - 40	50 - 60	NA	NA
	512V DC	ND - HP	0.75 - 11	15 - 18.5	22 - 37	45	55 - 75	90 - 132	132 - 160	(Future)
		HD - HP	0.55 - 7.5	11 - 15	8.5 - 30	37	45 - 55	75 - 110	110 - 132	(Future)
	620V DC	ND - HP	0.5 - 15	20 - 25	30 - 50	60	75 - 100	125 - 150	200 - 250	(Future)
		HD - HP	0.33 - 10	15 - 20	25 - 40	50	60 - 75	100 - 125	150 - 200	(Future)
	775V DC	ND - HP	0.5 - 15	20 - 25	30 - 50	60	75 - 100	125 - 150	150 - 200	(Future)
		HD - HP	0.33 - 10	15 - 20	25 - 40	50	60 - 75	100 - 125	150	(Future)

(1) Frame 10 is a 25 inch deep, flush-back enclosure.

Drive Unit Options

Table 1.B PowerFlex® 700 and 700S Drives

Options Available to All Units:		
Option	**Option Code**	**Description**
Control Power Source[1][6]	6P	Individual 115V AC-secondary, control power transformer (supplied per drive unit). Includes primary fusing
	6TB	115V AC control power, factory wired from 115V AC control bus to drive unit (requires control bus)
	6SC	115V AC control power supplied by customer
Auxiliary Contact for Disconnect[3]	98	(1) normally open (Y = option avail.)
	99	(1) normally closed (Y = option avail.)
Wire Label Upgrade Option[10]	14WLBL	Brady Datab™ wire labels
T-Handles[2]	111	T-handles on doors and 3" vertical wireway (present in MCC sections containing frame 0, 1, 2, & 3 drive units
	110	Standard handles
Door-Mounted Devices[4]	1ES	Hardwired-interface-stop-pushbutton; for drive-disable function
	4EA	Control-power-on pilot light
	4EW	Drive-faulted pilot light
Miscellaneous	J11	Audio phone jack
	J12	115V AC, 15A, duplex receptacle
Unit Door Nameplates[1]	M3EW	Phenolic label with white background and black lettering
	N3EB	Phenolic label with black background and white lettering
	N3ER	Phenolic label with red background and white lettering
Communication Adapters[1][15]	14PNA	No Communication adapter
	14PCNC	DPI - ControlNet adapter, coaxial cable
	14PCNF	DPI - ControlNet adapter, fiber optic
	14PDF1	DPI - RS485 DF-1 adpater
	14PDPV1	DPI - PROFIBUS DPV-1 adapter
	14PEA	DPI - Ethernet adapter
	14PG1	DPI - Single-Point Remote I/O (RIO) adapter
	14PG5	DPI - DeviceNet adapter
	14PHVA	DPI - RS485 HVAC adapter (future)
	14PIB	DPI - Interbus adapter (future)
	14PLW	DPI - LonWorks® adapter (future)
Communication Adpater (PowerFlex 700S with DriveLogix Only)[1][15]	14DLD	ELC - DeviceNet adapter
	14DLE	ELC - EtherNet adapter
	14DLOC	ELC - ControlNet adapter, coaxial cable
	14DLOF	ELC - ControlNet adapter, fiber optic
	14DLORC	ELC - ControlNet Redundant adapter, coaxial cable
	14DLORF	ELC - ControlNet Redundant adapter, fiber optic
Human Interface Module (HIM)[3]	14HAPC	Door-mounted HIM, Programmer Only LCD
	14HA3C	Door-Mounted HIM with full numeric LCD
	HA1C	Drive-Mounted Him with analog LCD
	HA2C	Drive-Mounted HIM with digital LCD
	HA3C	Drive-Mounted HIM with full numeric LCD
	HAP	Door-Mounted HIM Programmer Only LCD
Drive Enclosure[1]	14DO	Open
	14D1	NEMA 1
	14D12	NEMA 12
	14DF	Flange

Options Available to All Units:		
Option	**Option Code**	**Description**
Drive Duty Cycle[1]	99ND	Normal Duty
	99HD	Heavy Duty
Emissions[1]	14EMA	CE filter and common mode choke[18][19][21]
	14EMB	CE filter and no common mode choke[20][21]
	14EMB1	CE filter and external common mode choke[22]
	14EMN	No CE filter and no common mode choke[22][23]
	14EMN1	No CE filter and external common mode choke[22][23]
Documentation[1][16]	N	No documentation
	A	English User Manual
	E	Quick Start Guide and CD
I/O Selection (PowerFlex 700 Only)[1]	14IOC	Vector I/O, 24V
	14IOD	Vector I/O, 115V
Control (PowerFlex 700S Only)[1]	14CIOA	Phase II with expanded cassette, no Logix extras, no SynchLink™
	14CIOB	Phase II with expanded cassette, no Logix extras, with SynchLink
	14CIOC	Phase II with expanded cassette, with Logix extras, no SynchLink[14]
	14CIOD	Phase II with expanded cassette, with Logix extras, with SynchLink[14]
	14CIOG	Phase II slim cassette, no Logix extras, no SynchLink
	14CIOH	Phase II slim cassette, no Logix extras, with SynchLink
Configurations[1]	ELC2SNN	Phase II, no DriveLogix, no embedded comm.
	ELC2SNE	Phase II, no DriveLogix, EtherNet/IP embedded comm.
	ELC2SNC	Phase II, no DriveLogix, ControlNet embedded comm.
	ELC2SEN	Phase II, 5730 DriveLogix™, no embedded comm.
	ELC2SEE	Phase II, 5730 DriveLogix, EtherNet/IP embedded comm.
	ELC2SEC	Phase II, 5730 DriveLogix, ControlNet embedded comm.
Compact I/O Cable[17]	CIOL	Drive to left bank expansion
	CIOR	Drive to right bank expansion
Feedback (PowerFlex 700 Only)[1]	14ENC	Standard encoder
	14ENCN	No feedback PCB
Feedback (PowerFlex 700S Only)[1]	14EN2	Second encoder feedback[14]
	14HEF	Heidenhain feedback PCB[13]
	14HENC	Hi-Resolution Stegmann resolver feedback PCB[13]
	14MDI	Multi-Device Interface[13]
	14PN	No feedback PCB
	14RES	Resolver feedback PCB[13]
	14SO	Safe-Off (includes second encoder feedback)[14]
Braking Option[1]	16BI	Braking IGBT included
	16BNI	Braking IGBT not included
Braking Resistor[1]	14BR	Braking resistor included
	14BRN	Braking resistor not included
	14BRE	Braking resistor, external
Enclosure Options		
MCC Bottom Support[1][5]	XBC	1.5 inch high base channels
	XBSM	Bottom support angle multi-section

Options Available to All Units:		
Option	**Option Code**	**Description**
Horizontal Power Bus(3)(7)(9)(11)(12)	08-AC	800A AC power bus
	08-DC	800A DC power bus
	12-AC	1200A AC power bus
	16-AC	1600A AC power bus
	16-DC	1600A DC power bus
	20-AC	2000A AC power bus
	30-AC	3000A AC power bus
	30-DC	3000A DC power bus
Ground Bus (PE/TE)(1)(8)	XTEP2	PE/TE bus for unit with horizontal bus rated up to 2000A
	XTEP3	PE/TE bus for unit with horizontal bus rated up to 3000A
115V AC Control Bus(9)	X115	90A control bus
Top Hat		12 inch high top hat for extra entry cable bending radius

(1) You must select (1) option from this group.
(2) All drives mounted in the same MCC vertical section must have option 111 if any one drive unit has option 111.
(3) You may select up to (1) option from this group.
(4) Pilot lights are Allen-Bradley® Bulletin 800M products and the pushbutton is an Allen-Bradley Bulletin 800T device.
(5) If one drive unit has base channels in any lineup, the entire lineup must have base channels. Base channels add 1.5 inches to the unit height.
(6) Option 6P is not available for drive units with voltage codes D, S, E, and F.
(7) Units with voltage codes D, S, E and F require horizontal power bus options. Only 800A, 1600A, and 3000A are available.
(8) You must select a ground bus option. If your lineup has a 3000A power bus, you must select the ground bus option for units with a 3000A-rated power bus.
(9) You must select a horizontal power bus option if you select a control bus.
(10) Units come standard with cloth wire labels. Datab labels offer the added protection of a clear plastic cover on top of the labels.
(11) Horizontal power bus is braced for 65kAIC.
(12) Maximum of 120 inches per shipping split.
(13) Requires an expended cassette for Phase II control.
(14) Available for Phase II control only. Requires an expanded cassette.
(15) For dual communications (DPI and DriveLogix) select the DriveLogix comm. option and order the DPI comm. kit separately.
(16) PowerFlex 700 frame 0 - 6 allows the “N” or “A” selections only. PowerFlex 700 frame 9 allows the “A” selection only. PowerFlex 700S frames 1 - 9 allows the “N” or “E” selections only.
(17) PowerFlex 700S only, requires an expanded cassette with Logix extras PCB.
(18) Required for PowerFlex 700S frames 1 - 6.
(19) Required for PowerFlex 700 frames 0 - 6 with voltages 380V AC, 460V AC, 575V AC, 512V DC, 620V DC, and 775V DC
(20) Required for PowerFlex 700 frames 0 - 2 with voltages 230V AC and 310 V DC
(21) You must select one (1) of these options for PowerFlex 700 frame 3 with voltages 230V AC and 310 V DC
(22) You must select one (1) of these options for PowerFlex 700S frame 9 with voltages 380V AC, 460V AC and 575V AC
(23) You must select one (1) of these options for PowerFlex 700S frame 9 with voltages 512V DC, 620V DC and 775V DC

Notes:

1336 PLUS™ Variable Frequency, 1336 PLUS™ II, 1336 FORCE - Vector Control, 1336 IMPACT Product Selection

Catalog Number Explanation

Use the following tables for determining the catalog number used to order 1336 PLUS™ Variable Frequency, 1336 PLUS™ II, 1336 FORCE - Vector Control, and 1336 IMPACT drives in Bulletin 2362 MCCs.

2362	S	A	-	4	A	B	-	48	DA	-	OPTIONS

Drive Type

E	1336S PLUS (AC Common Bus)
F	1336T FORCE (AC Common Bus)
G	1336S PLUS (DC Common Bus)
H	1336T FORCE (DC Common Bus)
L	1336E IMPACT (AC Common Bus)
M	1336E IMPACT (DC Common Bus)
N	1336E PLUS II (AC Common Bus)
P	1336E PLUS II (DC Common Bus)

Wiring Type

A	"A" Type
B	"A" Type Power Wiring with Bottom Exit
T	"A" Type Power Wiring with Top Exit

Frame Size

See Table 2.B on page 2-3

Enclosure

A	NEMA Type 1 with no gaskets or door fan filters
J	NEMA Type 1 with gaskets or door fan filters

Input Voltages

A	230V AC Bus
N	380V AC Bus
B	460V AC Bus
C	575V AC Bus
D	310V DC Bus
S	512V DC Bus
E	620V DC Bus
F	775V DC Bus

Horsepower Rating(3)

33	0.5
34	0.75
35	1.0
36	1.5
37	2.0
38	3.0
39	5.0
40	7.5
41	10
42	15
43	20
44	25
45	30
46	40
47	50
48	60
49	75
50	100
51	125
52	150
54	200
56	250
57	300
58	350
59	400
60	450
61	500
62	600
63	650
64	700
66	800

Disconnect Type

DA	Fused Disconnect

Options

See Drive Unit Options on page 2-3

Frame Selection

The following table is used to determine the frame size required based on the desired Drive Type, Input Voltage and Horsepower.

Table 2.A 1336 Frame Selection

			1336 Frame Sizes							
	Drive Type Code	Input Voltage	A (1.5 SF 20" Wide)	B (2.5 SF 20" Wide)	C (3.5 SF 20" Wide)	D (6.0 SF 20" Wide)	E (6.0 SF 25" Wide)	F (6.0 SF 35" Wide)	G (6.0 SF 35" Wide)	H (6.0 SF 35" Wide)
1336S PLUS	E	230V AC	0.5 - 5.0 HP	7.5 - 15 HP	10 - 30 HP	NA(1)	NA	NA	NA	NA
		380/460V AC	0.5 - 5.0 HP	7.5 - 30 HP	40 - 50 HP	60 - 125 HP	150 - 250 HP	300 - 400 HP	450 - 600 HP	NA
		575V AC	1, 3 HP	7.5 - 20 HP	25 - 60 HP	75 - 125 HP	150 - 300 HP	350 - 400 HP	450 - 650 HP	NA
	G	310V DC	0.5 - 5.0 HP	7.5 - 15 HP	10 - 30 HP	NA	NA	NA	NA	NA
		512/620V DC	0.5 - 5.0 HP	7.5 - 30 HP	40 - 50 HP	60 - 125 HP	150 - 250 HP	300 - 400 HP	450 - 600 HP	NA
		775V DC	1, 3 HP	7.5 - 20 HP	25 - 60 HP	75 - 125 HP	150 - 300 HP	350 - 400 HP	450 - 650 HP	NA
1336T FORCE	F	230V AC	NA	1, 3, 7.5 - 15 HP	20 - 30 HP	NA	NA	NA	NA	NA
		380/460V AC	NA	1, 3, 7.5 - 30 HP	40 - 50 HP	60 - 125 HP	150 - 250 HP	300 - 400 HP	450 - 600 HP	NA
		575V AC	NA	1, 3, 7.5 - 20 HP	25 - 60 HP	75 - 125 HP	150 - 300 HP	350 - 400 HP	450 - 650 HP	NA
	H	310V DC	NA	1, 3, 7.5 - 15 HP	20 - 30 HP	NA	NA	NA	NA	NA
		512/620V DC	NA	1, 3, 7.5 - 30 HP	40 - 50 HP	60 - 125 HP	150 - 250 HP	300 - 400 HP	450 - 600 HP	700, 800 HP
		775V DC	NA	1, 3, 7.5 - 20 HP	25 - 60 HP	75 - 125 HP	150 - 300 HP	350 - 400 HP	450 - 650 HP	700, 800 HP
1336E IMPACT	L	230V AC	0.5 - 5.0 HP	7.5 - 15 HP	10 - 30 HP	NA	NA	NA	NA	NA
		380/460V AC	0.5 - 5.0 HP	7.5 - 30 HP	40 - 50 HP	60 - 125 HP	150 - 250 HP	300 - 400 HP	450 - 600 HP	NA
		575V AC	1, 3 HP	7.5 - 20 HP	25 - 60 HP	75 - 125 HP	150 - 300 HP	350 - 400 HP	450 - 650 HP	NA
	M	310V DC	0.5 - 5.0 HP	7.5 - 15 HP	10 - 30 HP	NA	NA	NA	NA	NA
		512/620V DC	0.5 - 5.0 HP	7.5 - 30 HP	40 - 50 HP	60 - 125 HP	150 - 250 HP	300 - 400 HP	450 - 600 HP	700, 800 HP
		775V DC	1, 3 HP	7.5 - 20 HP	25 - 60 HP	75 - 125 HP	150 - 300 HP	350 - 400 HP	450 - 650 HP	700, 800 HP
			A (1.5 SF <= 5 HP 2.5 SF >5 HP 20" Wide)	B (2.5 SF 20" Wide)	C (3.5 SF 20" Wide)	D (6.0 SF 20" Wide)	E (6.0 SF 25" Wide)	F (6.0 SF 35" Wide)	G (6.0 SF 35" Wide)	H (6.0 SF 35" Wide)
1336F PLUS II	N	230V AC	0.5 - 5.0 HP	7.5 - 15 HP	20 - 30 HP	NA	NA	NA	NA	NA
		380/460V AC	0.5 - 15 HP	20 - 30 HP	40 - 50 HP	60 - 125 HP	150 - 250 HP	300 - 400 HP	450 - 600 HP	NA
		575V AC	0.5 - 20 HP	7.5 - 20 HP	25 - 60 HP	75 - 125 HP	150 - 300 HP	350 - 400 HP	450 - 650 HP	NA
	P	310V DC	0.5 - 5.0 HP	7.5 - 15 HP	20 - 30 HP	NA	NA	NA	NA	NA
		512/620V DC	0.5 - 15 HP	20 - 30 HP	40 - 50 HP	60 - 125 HP	150 - 250 HP	300 - 400 HP	450 - 600 HP	NA
		775V DC	0.5 - 20 HP	7.5 - 20 HP	25 - 60 HP	75 - 125 HP	150 - 300 HP	350 - 400 HP	450 - 650 HP	NA

(1) NA = Not Available

Drive Unit Options

Table 2.B Drive Unit Options

Options Available to All Units:

Option	Option Code	Description	230V AC / 310V DC	380V AC / 460V AC	512V DC / 620V DC	575V AC	775V DC
		Input Voltage >					
		Frame Size >	A,B,C	A,B,C,D,E	F,G,H	A,B,C,D,E	F,G,H
Control Power Source[1][6]	6P	Individual 115V AC-secondary, control power transformer (supplied per drive unit). Includes primary fusing					
	6TB	115V AC control power, factory wired from 115V AC control bus to drive unit (requires control bus)					
	6SC	115V AC control power supplied by customer					
Auxiliary Contact for Disconnect[3][5]	98	(1) normally open (Y = option avail.)	Y	Y		Y	
	99	(1) normally closed (Y = option avail.)	Y	Y		Y	
	989	(1) normally open + (1) normally closed (Y = option avail.)			Y		Y
Wire Label Upgrade Option[11]	14WLBL	Brady Datab™ wire labels					
T-Handles[2]	111	T-handles on doors and 3" vertical wireway (present in MCC sections containing frame A, B, & C drive units					
Door-Mounted Devices[4]	1ES	Hardwired-interface-stop-pushbutton; for drive-disable function					
	4EA	Control-power-on pilot light					
	4EB	Drive-at-speed pilot light					
	4ER	Drive-run pilot light					
	4EW	Drive-faulted pilot light					
Miscellaneous	J11	Audio phone jack					
	J12	115V AC, 15A, duplex receptacle					
Unit Door Nameplates[1]	M3EW	Phenolic label with white background and black lettering					
	N3EB	Phenolic label with black background and white lettering					
	N3ER	Phenolic label with red background and white lettering					
Communication Adapters[3]	14CN1	DPI - SCANport™ to ControlNet adapter					
	14G1	SCANport to Single-Point Remote I/O (RIO) adapter					
	14G2	SCANport to RS232/422/485, DF1, or DH485 adapter					
	14G5	SCANport to DeviceNet adapter					
Human Interface Module (HIM)[3]	14HA1C	Door-mounted HIM with analog potentiometer					
	14HA2C	Door-mounted HIM with digital potentiometer					
	14HAPC	Door-mounted HIM, Programmer Only LCD					
	14HNBC	Door-mounted connector permitting connection of a hand-held HIM or GPT through closed-door unit					

Options Available to 2362E & 2362G Units:

Option	Option Code	Description
Control Logic Interface Boards[3]	14L5	24V DC
	14L5E	24V DC with encoder feedback
	14L6	115V AC
	14L6E	115V AC with encoder feedback
Languages[1]	14DE	English/German
	14EN	English/English
	14ES	English/Spanish
	14FR	English/French
	14IT	English/Italian

Options Available to 2362F & 2362H Units:		
Option	**Option Code**	**Description**
Control Logic Interface Boards[3]	14L5	24V DC
	14L6	115V AC
Drive Adapter Boards[1]	14CN	ControlNet (version 1.5) Adapter
	14PCA	PLC Comm Adapter
	14SA	Standard Adapter (If you selected Control Logic Interface Board 14L5 or 14L6, you must choose this Drive Adapter Board.)
Languages[1]	14EN	English/English
	14ES	English/Spanish
	14FR	English/French

Options Available to 2362L & 2362M Units:		
Option	**Option Code**	**Description**
Control Logic Interface Boards[3]	14L5	24V DC
	14L6	115V AC
	14L8E	24V DC with encoder feedback and encoder loss detection
	14L9E	115V AC with encoder feedback and encoder loss detection
Languages[1]	14DE	English/German
	14EN	English/English
	14ES	English/Spanish
	14FR	English/French
	14IT	English/Italian

Options Available to 2362N & 2362P Units:			
Option	**Option Code**	**Description**	
Control Logic Interface Boards[3]	14L5	24V DC	
	14L5E	24V DC with encoder feedback	
	14L6	115V AC	
	14L6E	115V AC with encoder feedback	
	14L8E	24V DC with encoder feedback and encoder loss detection	
	14L9E	115V AC with encoder feedback and encoder loss detection	
Analog Interface Board	Port A[3]	14LA2 =	(2) isolated, configurable inputs
		14LA6 =	(3) non-isolated, thermistor/RTD inputs
		14LA7 =	(1) isolated, bipolar input (+/- 10V and (1) isolated, configurable input
	Port B[3]	14LA1 =	(1) single-ended, non-isolated, configurable input OR (1) potentiometer & (2) single-ended, non-isolated, 1-to-20mA outputs
		14LA3 =	(2) isolated, configurable outputs
		14LA4 =	(1) isolated, configurable input and output
		14LA5 =	(1) isolated, pulse input and output & (1) single-ended, non-isolated, 0-to-10V output

Enclosure Options Available to All Units:

Option	Description														
Section Depth[7][12]	**Input Voltage >**	230V AC	380/460V AC			575V AC			310V DC	512V/620V DC			775V DC		
	Frame Size >	A, B, C	A, B, C	D, E	F, G	A, B, C	D, E	F, G	A, B, C	A, B, C	D, E, F	G, H	A, B, C	D, E, F	G, H
	15” deep MCC (Y = option avail.)	Y	Y			Y			Y	Y			Y		
	20” deep MCC (Y = option avail.)	Y	Y	Y		Y	Y		Y	Y	Y		Y	Y	
	25” deep MCC (Y = option avail.)				Y			Y				Y			Y
1.5 Inch High Base Channels[5][7]	Required (R) or Optional (O):	O	O	O	R	O	O	R	O	O	O	R	O	O	R
Horizontal Power Bus[8][13][14][15][16]	**Input Voltage >**	230V AC 380V AC 460V AC 575V AC	310V DC 512V DC 620V DC 775V DC												
	800A (Y = option avail.)	Y	Y												
	1200A (Y = option avail.)	Y													
	1600A (Y = option avail.)	Y	Y												
	2000A (Y = option avail.)	Y													
	3000A (Y = option avail.)	Y	Y												
Ground Bus (PE/TE)[9][16]	PE/TE bus for unit with horizontal power bus rated up to 2000A														
	PE/TE bus for unit with horizontal power bus rated up to 3000A														
115V AC Control Bus[10][16]	90A control bus														
Top Hat[17]	12” high top hat for extra entry cable bending radius														

(1) You must select (1) option from this group.
(2) All drives mounted in the same MCC vertical section must have option 111 if any one drive unit has option 111.
(3) You may select up to (1) option from this group.
(4) Pilot lights are Allen-Bradley® Bulletin 800M products and the pushbutton is an Allen-Bradley Bulletin 800T device.
(5) If one drive unit has base channels in any lineup, the entire lineup must have base channels. Base channels add 1.5 inches to the unit height.
(6) Option 6P is not available for drive units with voltage codes D, S, E, and F.
(7) If you are connecting to an FD86N cabinet, you must select base channels and enclosures that are 20 inches and/or 25 inches deep.
(8) Units with voltage codes D, S, E and F require horizontal power bus options. Only 800A, 1600A, and 3000A are available.
(9) You must select a ground bus option. If your lineup has a 3000A power bus, you must select the ground bus option for units with a 3000A-rated power bus.
(10) You must select a horizontal power bus option if you select a control bus.
(11) Units come standard with cloth wire labels. Datab labels offer the added protection of a clear plastic cover on top of the labels.
(12) If at least one unit in a lineup is 20 inches or 25 inch deep flush back, then all other drive units in that lineup must be 20 inches or 25 inches deep.
(13) If the drive unit is mounted in a 25 inch deep flush front enclosure, you must select a 3000A horizontal power bus for that unit. If you have drives mounted in 15 inch or 20 inch deep sections in the same lineup, you may select a different horizontal power bus option; but all non-25 inch deep enclosure units in a lineup must have the same horizontal power bus option. The horizontal power bus rating of the entire lineup equals the lowest power bus rating selected.
(14) Horizontal power bus is braced for 65kAIC.
(15) Maximum of 120 inches per shipping split.
(16) Horizontal power bus and control bus (if selected) are mounted at a depth of 11.94 inches in all MCC sections containing frame A, B, and C drive units, regardless of section depth. Frame D, E, F, G, and H drives units have power bus and control bus (if selected) mounted at a depth of 16.94 inches or greater with bus ends for splicing always at a depth of 16.94 inches. Select offset splice kit(s) when shipping split requires splicing bus ends at a depth of 11.94 inches to bus ends at a depth of 16.94 inches. If both sections have bus ends at the same depth, select straight splice kits. Use the tables in the Power Bus Splice Kit Catalog Numbers section on page 4-1 to select splice splits per shipping split.
(17) Frame F, G, and H drive units require top hats if input power is not supplied by a power bus option.
(18) Requires an expended cassette for Phase II control.
(19) Available for Phase II control only. Requires an expanded cassette.
(20) For dual communications (DPI and DriveLogix) select the DriveLogix comm. option and order the DPI comm. kit separately.

Notes:

Motor Control Center Vertical Sections

Features and Modifications

Table 3.A Motor Control Center Vertical Section Features and Modifications

Section Features and Modifications	App. Notes	Description	
Section Depth	**1, 2, 3, 10**	15” Deep 20” Deep 25” Deep (flush back)	
Horizontal Power Bus	**4**	Tin-plated copper busbar	**Bus Rating** 800A 1200A (AC only) 1600A 2000A
	4, 5		3000A
Horizontal Power Bus Bracing		42kAIC (rms Symmetrical) 65kAIC (rms Symmetrical)	
Horizontal Power Bus Splice Kit	**6**	Splice bars and assembly hardware.	**Bus Rating** 800A 1200A 1600A 2000A
	5, 6		3000A
Horizontal (PE / TE) Ground Bus	**4, 5**	1/4” x 1” PE and 1/4” x 1” TE tin-plated copper bus 1/4” x 2” PE and 1/4” x 1” TE tin-plated copper bus	
Horizontal Ground Bus Splice Kit	**5, 6**	For 1/4” x 1” PE and 1/4” x 1” TE tin-plated copper bus For 1/4” x 2” PE and 1/4” x 1” TE tin-plated copper bus	
Horizontal Control Bus		Tin-plated copper 115V AC control bus rated at 90A	
Horizontal Control Bus Splice Kit	**6**	For tin-plated copper 115V AC control bus rated at 90A	
Pull Box		12” High x 15” Deep, 20” Deep OR 25” Deep	
Blank Unit Doors		Covers unused unit space (includes unit support pan)	0.5 SF 1.0 SF 1.5 SF 2.0 SF 2.5 SF 3.5 SF 4.5 SF
Base Channels	**7, 8, 9**	Two 1.5” x 3” mounting channels (One front, one rear)	

1 All 1336 D and E-frame drive units and common DC bus F-frame drive units and PowerFlex frames 4 - 9 have 20" deep sections as standard. Common AC bus F-frame drive units and all G-frame and H-frame drive units have 25"bump-back sections as standard.

2 If you are using a Bulletin 2364 front-end common-DC-bus supply unit in your lineup, verify that the front-end depth is compatible with the Bulletin 2362 sections that you are selecting.

3 If ANY one section is at least 20" deep, then ALL sections in that lineup must be at least 20" deep.

4 You must specify a power bus and a ground bus for each section.

5 3000A-rated horizontal power bus requires a 1/4" x 2" horizontal ground bus (PE) selection. Zero potential bus (TE) remains at 1/4" x 1" regardless of horizontal ground bus (PE) size selection. Splice kits with 1/4" x 2" PE contain three 1/4" x 1" bus splices (Qty 2 for PE + Qty 1 for TE); splice kits with 1/4" x 1" PE contain two.

6 One kit required per shipping split on flush-front lineups. (Control bus splice kits are only required if lineup has control bus.)

7 Common AC bus F-frame drive units and all G-frame and H-frame drive units require base channels.

8 If you are using a Bulletin 2364 front-end unit in your lineup, lookup the base channel requirements of the front-end being utilized.

9 If ANY one section has base channels, then ALL sections in that lineup must have this optional base channel factory-installed. Base channels add 1.5" to the overall section height.

10 PowerFlex® frame 10 requires a 25” deep flush back section.

Notes:

Busbar Splice Kits

Understanding Busbar Splice Catalog Numbers

Each character of the catalog number identifies a specific type or size of a particular busbar splice kit. The first four numbers represent the family of products (for example, 2300). The remaining characters represent a specific version.

Determining Splice Kit Catalog Numbers

To help you to understand, we will provide an example of how to determine a catalog number for a Bulletin 2300 Family busbar splice kit.

The beginning portion of the catalog number for all 2300 busbar splice kits is 2300H (H is for a hardware kit). The remaining portion of the catalog number will represent the particular type of kit.

The catalog number is organized as follows:

2300	H	-	SK	Busbar type	-	Busbar splice shape	Power Bus Current Rating

For example, a catalog number on the following page for 2300H-SKA-Z16 would mean:

- a common-AC power bus system
- a power bus rating of 1600 Amps
- an offset splice is needed

Splice Kit Catalog Numbers

Power Bus Splice Kit Catalog Numbers

For:	Use:
Splicing directly to a common AC bus F-frame 2362 unit or any G-frame 2362 unit	Table 4.C
All other AC common bus splicing applications	Table 4.A
All DC common bus splicing applications	Table 4.B

Table 4.A AC Power Bus Splice Kits

Compatible with Frame Sizes		Continuous Power Bus Rating (Amps)	Straight Splice Kit	Offset Splice Kit
1336	PowerFlex			
A, B, C, D, E	0 - 9	800	2300H-SKA-L08	2300H-SKA-Z08
A, B, C, D, E	0 - 9	1200	2300H-SKA-L12	2300H-SKA-Z12
A, B, C, D, E	0 - 9	1600	2300H-SKA-L16	2300H-SKA-Z16
A, B, C, D, E	0 - 9	2000	2300H-SKA-L20	2300H-SKA-Z20
A, B, C, D, E	0 - 9	2500	2300H-SKA-L25	2300H-SKA-Z25
A, B, C, D, E	0 - 9	3000	2300H-SKA-L30	2300H-SKA-Z30
F, G, H		Up to 3000	2300H-SKA-L30S	2300H-SKA-Z30

Table 4.B DC Power Bus Splice Kits

Compatible with Frame Sizes		Continuous Power Bus Rating (Amps)	Straight Splice Kit	Offset Splice Kit
1336	PowerFlex			
A, B, C, D, E, F	0 - 9	800	2300H-SKD-L08	2300H-SKD-Z08
A, B, C, D, E, F	0 - 9	1600	2300H-SKD-L16	2300H-SKD-Z16
A, B, C, D, E, F	0 - 9	3000	2300H-SKD-L30	2300H-SKD-Z30
G, H		Up to 3000	2300H-SKD-L30S	2300H-SKD-Z30

Table 4.C Special Power Bus Splice Kits

Use these kits when splicing directly to a Common AC Bus F-frame 2362 Unit or any G-frame 2362 Unit.

Power Bus Rating (Amps)	Straight Splice Kit	Offset Splice Kit
600-3000	2300H-SKA-L30S	2300H-SKA-Z30

Control Bus Splice Kit Catalog Numbers

Table 4.D Control Bus Splice Kits

Compatible with Frame Sizes	Straight Splice Kit	Offset Splice Kit
All	2300H-SKC-L	2300H-SKC-Z

PE/TE Bus Splice Kit Catalog Numbers

Table 4.E PE/TE Bus Splice Kits

Compatible with Frame Sizes	Power Bus Rating (Amps)	PE/TE Bus Splice Kit
All	800-3000	2300H-SKG-30

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